

ASHRAE Technical Committee 4.3:

Ventilation Requirements & Infiltration

2018 Annual Meeting

DRAFT Meeting Minutes

Monday June 25, 2018, 4:15 pm-6:30 pm
Hilton 339 AB

These draft minutes have not been approved and are not the official, approved record until approved by this committee.

ASHRAE Technical Committee 4.3: Ventilation Requirements & Infiltration

2018 Annual Meeting

Meeting Minutes

Monday June 25, 2018, 4:15 pm-6:30 pm

Hilton 339 AB

1. COMMITTEE AND MEETING INFORMATION

Subcommittee Meetings:

Research: During Main Meeting

Program: During Main Meeting

Handbook: During Main Meeting

Scope: TC 4.3 is concerned with ventilation requirements and the analysis of infiltration, airflow around buildings, and exhaust re-entry, including their integration with indoor air quality and energy calculations for building and HVAC system design and operation.

TC Web Site: <https://tc0403.ashraetcs.org/>

2. CALL TO ORDER

Voting Members				
	Name	Position	Company	Roll Off June 30
1	Josephine Lau	Chair	Univ of Nebraska-Lincoln	2018
2	Martin Stangl	Vice-chair	RWDI	2019
3	Jordan D Clark	Secretary	Ohio State	2021
4	Steve Taylor	Research	Taylor Engineering	2021
5	Ed Light	Member	Building Dynamics	2019
6	Mini Malhotra	Program / Membership	Oak Ridge National Laboratory	2019
7	Nathan Ho	Member	P2S Engineering	2020
Non-Voting Officers				
	Steve Duda	Honors	Ross & Baruzzini, Inc.	-
	Brian Rock	Handbook	The University of Kansas	-
	Xia Fang	Webmaster	McKinstry	-

Quorum>1/2 all VM, excluding NQM; super majority >=2/3 VM present; simple majority>1/2 VM present

3. APPROVE AGENDA

Clark moved, Light second, 5-0-0

4. APPROVE MINUTES FROM PREVIOUS MEETING

Light moved, Ho second, 5-0-0

5. ANNOUNCEMENTS (TC CHAIR)

a. Stangl communicated notes from chair's breakfast, See Appendix A:

- 1) Conference papers will go back into Transactions starting in Atlanta. Looking for reviewers.

- 2) Please update information on roster.
- 3) Advocated for use of ASHRAE Basecamp for file sharing and version control for research documents for which there was general agreement in the room.
- b. Commitment to the ASHRAE Code of Ethics – (TC Chair): In this and all other ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, integrity and respect for others, and we shall avoid all real or perceived conflicts of interests. (See full Code of Ethics: <https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics>.)”

6. LIAISON REPORTS

- a. Technical Activities Committee (TAC) (Dennis Wessel).
 - 1) Offered appreciation for Josephine’s leadership.
 - 2) Mentioned that committee membership information is available on ASHRAE website.
 - 3) Mentioned that ASHRAE letterhead is only to be used outside of Society with approval from ASHRAE president.
 - 4) Looking for programs of historical nature for next year, ASHRAE’s anniversary. Abstracts due December of 2018.
 - 5) TC MOP’s are continuously updated by TAC.
 - 6) Basecamp is a service available for our use. ASHRAE staff will work with you to set up if needed.
- b. Standards (Cecily Grzywacz).
 - 1) Not present. Was mentioned that she hasn’t served in this role for a bit. Chair will look into appointing new person.
- c. Conferences and Expositions Committee (CEC).
 - 1) Not present
- d. Handbook Committee (Harris Sheinman).
 - 1) Not present
- e. Professional Development Committee (PDC) – (Donald Brandt).
 - 1) Not present
- f. Special Publications (Francis Mills).
 - 1) Not present
- g. Environmental Health Committee (Josephine Lau).
 - 1) Not present
- h. Research liaison (RAC) Mike Pouchack
 - 1) Congratulations for recent RP’s and WS’s being approved
 - 2) Encouraged PMS Chairs and RSC chair to view training videos on PMS’s on ASHRAE website. Live meeting held in the fall and invitation will go out to relevant parties.

- 3) Mentioned project milestones are important in order to ensure project work being done is commensurate with payment schedule.
- 4) Please include liaison on communications with RAC.
- 5) Please schedule a formal room for RP meetings.
- 6) Setting up basecamp site for Section 4.3 Research with contract documents, etc. accessible by PMS, RSC. rl4@ashrae.net

7. SUBCOMMITTEE REPORTS

a. Research (Steve Taylor, Pouchak filled in)

1) Research Subcommittee Meeting Chair Report

- a) Wessel: 3 RTARS and WS's were approved at RAC. New WS's will have project milestones. Encouraged PMS training
- b) Executive Session Held. Contractor selected for 1819, 1823.

2) Active Research Project Status

Name	Project	PMS	Status
RP-1747	Implementation of RP-1547 CO ₂ -based Demand Controlled Ventilation for Multiple Zone HVAC Systems in Direct Digital Control Systems	Dennis Stanke (chair), John Murphy Raj Daswani Heejin Cho	Not actually complete. On payment 7 of 8. PI needs to be contacted to deliver draft of technical paper in order to complete

3) Work Statements Status

WS - 1819	RP-1547 follow-up for systems with multiple recirculation paths	Steve Taylor /Josephine Lau	Executive Session was held. Contractor was selected.
WS 1823	Improved Exhaust-to-Intake Dilution (Concentration) Calculations	Steve Taylor Iain Walker Brian Rock	Executive Session was held. Contractor was selected.

4) Pending Research Projects Status

Name	Project	Champion	Status
Work Statement (WS)			
WS-1730	Pressure Coefficients and Pressure Drop for Standard Venting Strategies and Components in Residential Attic Spaces	TC 4.4 Anthony Fontanini	TC 4.4 voted to send to RAC. Deadline is Aug 15. Chair will distribute via email and vote to co-sponsor.
WS 1835	Characterizing the Performance of Entrained Flow Stacks	Brad Cochran	9.10 sponsored. TC4.3 is a co-sponsor. Cochran is revising. Plan is to have ready for vote in Atlanta.
Research Topic Acceptance Request (RTAR)			
Multidisciplinary Task Group (MTG)			
MTG	Idea of MTG around VOCs and VOC mixtures and what constitutes air quality.	Ed Light	TG 4 doing literature review on this topic and Light expects progress to be made within a year. Will continue to keep us updated.
New Ideas			
New	Infiltration vs. Pressurization impact with ERVs	Lau will try to find masters student	Tradeoff of reduced infiltration due to reduced exfiltration vs. energy recovery from exhaust air

Name	Project	Champion	Status
New	Cost effectiveness of sealing between floors in multistory buildings to reduce stack effect, requirements to reduce multi-family internal partition leakage	Marianne Tushi, Gren Yuill, from University of Toronto	Tushi using new investigator award to pursue this
	Cost effectiveness of code		both pollutant transport and energy conservation no update
	Outdoor particulate matter penetration and indoor PM removal rates in naturally ventilated commercial buildings	Jordan Clark	TC 4.3 and TC 2.4 voted to co-sponsor. 62.1 voted to co-sponsor. Clark moved to lead sponsor. Research chair will distribute for vote through email.
	Outdoor ozone in naturally ventilated buildings	Jordan Clark	TC 4.3 and TC 2.3 voted to co-sponsor. 62.1 voted to co-sponsor. Clark moved to lead sponsor. Research chair will distribute for vote through email.
	Fluctuating pressure conditions in single-sided natural ventilation	Jordan Clark James Lo	RTAR draft written. Research Chair reviewing
	Smart ventilation sensors	Jordan Clark	RTAR draft written. Research Chair reviewing
	Electric Vehicle effects on outdoor air	Steve Taylor	No update
	Understanding formaldehyde generation rates	Nathan Ho	Initiated by 62.1. Ho will reach out to 62.1 research subcommittee to define 4.3's role
On Hold or Inactive			
Hold	Is CO2 a pollutant or an indicator?	Steve Taylor	On hold. Will let existing research mature/evolve
URP	1853 Building on an existing residential ventilation- brushless permanent magnet motor changeouts- pollutant emissions characterizations and testing multi-zone system effectiveness	From RAC	RAC reviewing URP. TC 4.3 has been identified as primary TC for consideration.

5) Regular deadlines: March 1 (for spring RAC meeting), May 15 (for June meeting), August 15 (for fall RAC meeting), December 15 (for January meeting)

b. Program (Mini Malhotra)

1) New program ideas

City	Title	Type	Chair/Speakers
Atlanta	Results of RP-1747	Seminar	Steve Taylor
??	Where has my air been?	Seminar	John Carter, Martin Stangl Waiting for good track to submit to
??	62.2 update	Seminar	Iain Walker Waiting for 2019 new version of 62.2
??	Assessment of VOC mixtures	Workshop	Ed Light (with MTG)
Atlanta	Airflow around buildings	Seminar	John Carter, Ted Stathopoulos, Brad Cochran
KC	Sensors for control of ventilation and air cleaning	Seminar	Jordan Clark, LBNL?, 2.3?

2) Regular deadlines: February 6 (for June meeting)

3) See notes from CEC in Appendix C.

c. Handbook (Brian Rock)

1) Chapter status

Volume	Chapter	Lead	Status
2021 Fundamentals	Chapter 16 Ventilation and Infiltration	Jordan Clark	Will solicit comments soon by email
2021 Fundamentals	Chapter 24 Airflow Around Buildings	Ted Stathopoulos	2017 version published
Applications	Chapter 45 Building Air Intake and Exhaust Design	Jason Urso	Revision approved, submitted to HQ

2) Base files: <https://www.ashrae.org/resources--publications/ashrae-handbook-central>

3) Base files: <https://www.ashrae.org/resources--publications/ashrae-handbook-central>

d. Standards (Steve Emmerich)

1) TC 4.3 Cognizant

a) 62.1 Ventilation for Acceptable Indoor Air Quality (Nathan Ho)

(1) Many changes to NV procedure, Ventilation Effectiveness, Personal ventilation systems

(2) Working on guideline on “enhanced indoor air quality”. Draft should be distributed soon

b) 62.2 Ventilation for Acceptable IAQ in Low-Rise Residential Buildings (Iain Walker)

(1) Proposed change for unvented combustion devices, many comments

(2) Working on refinement of portions for multi-family that previously were in 62.1

(3) Consolidating addenda

(4) Trying to find out how to ensure ventilation systems are operated and not just installed

2) Others Standards of Interest

a) 90.1 (Steve Emmerich)

(1) No update

b) 170-2013: TC 9.6: Ventilation of Healthcare Facilities

(1) Completed RP on justification for requirements. Likely that many additional RPs will follow

e. Honors (Steve Duda)

1) See attached report in Appendix B

f. Webmaster (Xia Fang)

1) Not present. Chair will follow up to assess interest.

g. Membership (Mini Malhotra)

1) Membership list is being updated, streamlined. Chair will work with membership chair to update

8. NEW BUSINESS

a. MTG.OBD (occupant behaviors) (Mini Malhotra)

- 1) Several TC's are discussing 2 works statements and 3 new RTARs. Working toward integrating occupant behavior into building modeling, conducting surveys on occupant behavior. Malhotra will email notes to secretary for inclusion in minutes

b. Future Meetings

- 1) Jan. 12-16, 2019 - Atlanta, GA

9. EXECUTIVE SESSION HELD.

- a. Contractors for 1819-RP and 1823-RP were selected.

10. ADJOURN

- a. Time: 6:40pm

DRAFT

Appendix A: TC Breakfast Chair Agenda/Notes

AGENDA
SECTION TC/TG/TRG CHAIR'S BREAKFAST MEETING
2018 Annual Meeting
Houston, TX

Sunday, June 24th

6:30 A.M. – 8:00 A.M. CDT

Hilton Hotel – ALL Section meetings located on 4th Floor except for Section MTG section, which is on 3rd floor.

Section 1, Grand C Room, 4th Floor

Section 3, Grand F Room, 4th Floor

Section 5, Grand H Room, 4th Floor

Section 7, Grand J Room, 4th Floor

Section 9, Grand K Room, 4th Floor

Section MTG, Boardroom 334 Room, 3rd Floor

Section 2, Grand D Room, 4th Floor

Section 4, Grand G Room, 4th Floor

Section 6, Grand I Room, 4th Floor

Section 8, Grand E Room, 4th Floor

Section 10, Grand L Room, 4th Floor

- I. CALL TO ORDER
- II. ROLL CALL AND INTRODUCTIONS (5 minutes)
- III. ADDITIONS AND/OR CHANGES TO THE AGENDA (5 minutes)
- IV. REVIEW SPECIAL ASSIGNMENTS, ACTION ITEMS FROM LAST MEETING, AND NEW ISSUES (10 minutes).
New Assignments:
 - A. **Respond to TAC's Survey on TC Strengths –Weaknesses – Opportunities – Threats (SWOT) before Wednesday 6/27**
- V. DISTRIBUTE WRITTEN INFORMATION AND REQUESTS FROM SOCIETY LIAISONS TO TC/TG/TRG CHAIRS (30 minutes).

Additional Announcements/Reminders:

A. NEW!

- 1. 2018-2019 George B. Hightower Award Nominations due to Section Head September 1, 2018 & 2018-2019 Service to ASHRAE Research Award Nominations due to Research Liaison Sep. 1, 2018
- 2. Discuss if TGs, TRGs, and MTGs in section will continue in 18-19 Society Year
- 3. TC members improperly using ASHRAE letterhead – **Urgent Request!**
- 4. 18-19 Rosters Access & Distribution
- 5. MTGs that have been formed since Chicago Meeting – MTG.EBO (Effective Bldg. Operations)
- 6. Let's Celebrate ASHRAE's Technical Excellence Historically!
- 7. Oversight of TC websites with regard to Technical Bulletins (White Papers)
- 8. TC E-mail Position Aliases Annual Update
- 9. TC MOP (Manual of Procedures)
- 10. Distribution of TC minutes changed in TC MOP
- 11. How to Import Your TC Roster Information into MS-Outlook
- 12. Updated TAC Presentation Template Available for TC members to use with local Chapter
- 13. Basecamp Information from ECC
- 14. Notes from TAC / SSPC 90.1 Interface Meeting in Chicago & TC Survey Responses prior to Chicago.

B. AT THIS MEETING

- 1. On-Site Training Options – Incoming TC Chair Training on Duties and Responsibilities
- 2. Location of Section Head Mailboxes & Free Wi-Fi Access at this Society Meeting
- 3. RPM (Remote Participation Meetings)

Announcements and Reminders for TC/TG/TRG & MTG Chairs Houston 2018

C. UPCOMING DEADLINES

1. TC Activity Forms for the Houston Meeting are Due to Section Heads before Wednesday, 6/26/18
2. Seminar and Forum proposals for Atlanta are due by Friday, August 3, 2018

D. REMINDERS

1. 2018-2019 Rosters Access & Distribution
2. Useful TC/TG/TRG/MTG Chair Information and forms on ASHRAE Website
3. Request for each TC to review ASHRAE Code of Ethics at start of TC meeting
4. Make Special Effort to Welcome New Members and Visitors (Potential Members) to TC Meeting
5. Option for TC Subcommittee Meetings via Conference Calls and Web Meetings
6. Is your TC Website Up-to-date?
7. 18-19 TC Master Calendar – Now Available through Google

E. RECENT ANNOUNCEMENTS

1. CEC's Standing Request for Future Society Meeting Program Track Suggestions
2. CEC Seeks TC Volunteers willing to Support Content Development and Quality Control for Society Technical Program at Society Meetings
3. The Professional Development Committee (PDC) is seeking ideas for new ASHRAE Learning Institute (ALI) courses

F. CURRENT & UPCOMING ASHRAE CONFERENCE PROGRAMS

1. Program Focus of Houston Meeting
2. Atlanta Meeting – January 12 – 16, 2019 – Early this year! Plan ahead!
3. Kansas City Meeting – June 22 – 26, 2019

G. OTHER UPCOMING WORKSHOPS AND CONFERENCES

See Announcements & Reminders for list

VIII. REMARKS FROM SOCIETY LIAISONS TO TC/TG/TRG CHAIRS

Liaison members from Research Administration, ASHRAE Program, Handbook, Standards, and other standing committees will have an opportunity to describe their committee activities that relate to the TC/TG/TRG functions, if time permits. Written announcements must be provided as a minimum by liaisons in order to have an opportunity to speak at this meeting.

ADJOURN

**Announcements and Reminders for TC/TG/TRG & MTG Chairs
Houston 2018**

A. NEW!

1. **Nominations for Hightower and Service to ASHRAE Research Awards due September 1, 2018 to SH & RL, respectively.**
2. **Discuss and confirm that TGs, TRGs, and MTGs in section will continue in 18-19 Society Year**
TBD
3. **URGENT Request – Some TC members recently began to improperly use ASHRAE Letterhead to submit Comments on Standards and Codes in Public Review, which implies to the code authority or standard writing organization that it is an official comment of ASHRAE**
For Standards and Codes there is a clear process. It comes through with a vote by the TC to the Manager of Standards (MOS) and then the ASHRAE President has to approve it before it is submitted. If denied, each TC member can still submit their comments as individuals, but not on ASHRAE letterhead.
4. **18-19 Rosters Access & Distribution** - Remember, the current 2017-2018 roster for your TC, TG or MTG is in effect until after the June meeting this year – through Saturday, June 30th.

By now, each TC, TG and MTG chair should have received a PDF & MS-Excel file of their new 2018-2019 roster from their Section Head or staff for distribution to the committee. In addition, each member can view all of the rosters of their committees on the ASHRAE Website. Go to www.ashrae.org <http://www.ashrae.org> and log-in (if you have not logged in lately, you might need to set up a new username and password), click on the "Membership" tab in the header, Go to the "My ASHRAE" section of the Membership page and click on "My Participation" text, and scroll down to the "Manage" link. Click on the "Committees" link in the left sidebar. Now, you should see all of the committees that you are a member of will appear. Click on the "blue" roster text on the right hand side of a committee name to reveal the roster in various file formats

The Provisional Corresponding Member (PCM) position is a relatively new position on TC/TG/TRG rosters. This position allows potential new members to be added by staff to the committee roster any time a request for membership is made by an individual. The position has a 2-year term on the committee. Staff will notify the chair and reissue a new roster to the committee chair any time a provisional member is added. The TC/TG/TRG chair has the option each year during the regular roster update process to convert provisional CMs that have been active participants on the committee the past year into regular CMs or voting members or drop them. If no action is taken, they will time expire from the roster and be removed by staff.

5. MTG.EBO (Effective Building Operations)

Scope: MTG.EBO will coordinate the activities of multiple TC/TG/TRG and other stakeholders in the area of training and tools to support the operation of buildings to enhance the indoor environment and use energy effectively. Responsibility will include suggestions for research as well as development of technical programs and special publications on effective building operation for energy management.

The initial MTG roster includes Voting Representatives and Alternates for TCs 1.4 (Control Theory and Application), 7.3 (Operation and Maintenance Management) 7.8 (Owning and Operating Costs) and GPC 1.3 (Building Operation and Maintenance Training for the HVAC&R Commissioning Process)

Other TCs GPCs, and SPCs may also now wish to participate in this MTG with a Voting Representative and Alternate(s) given its scope and charge.

6. Let's Celebrate ASHRAE's Technical Excellence Historically!

ASHRAE is highly regarded for its technological advances. Consider that these advances evolved from the efforts of our predecessors and you, and the current members of ASHRAE's Technical Committees in advancing HVAC&R technology are building on a deep foundation. So, what is the historical foundation of your Technical Committee specialty? ASHRAE will be celebrating its 125th anniversary in a couple years. The Historical Committee has a project to publish articles in the ASHRAE Journal and organize paper presentations celebrating our technical heritage for the anniversary. We plan to emphasize technical advances after 1920. Can you help with an article or a paper or can your TC organize and sponsor a program session for the 2019-2020 meetings?

Here is a list of topics that TC members have already suggested.

- Development of open communication protocols such as BACNET.
- Modern improvements in psychrometrics (Goff & Gratch).
- History and effect of the Environmental movement on our technology. How technology and equipment has improved the indoor environment.
- The refrigerant revolution
- Solving the problems of "sick buildings."
- The re-discovery of past technology and its application today (such as district energy, hydrocarbon refrigerants, off peak energy storage, "total energy" systems, etc.)
- History of the application of electronics to HVAC&R technology.
- ASHRAE's long history in applying innovative technology.
- History and importance of frozen food technology.

All of these topics and others you may think of need to be written up and/or presented by someone.

How about YOU?

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If you can't write a paper, the Historical Committee is also interested in suggestions for the best ASHRAE technical papers since 1995.

The 125th anniversary will be celebrated at the 2019 Annual meeting and the 2020 winter and Annual meetings. The Historical Committee has been charged with the responsibility of organizing Society and industry history projects for the 125th. If you would like to submit an article or a paper organize a program session, or suggest the best technical paper(s) since 1995, contact Chris Preyor, cpreyor@ashrae.org.

There is a deadline – please submit abstracts or outlines before **December 7, 2018** for consideration for the Orlando 2020 or Austin 2020 meetings.

7. Oversight of TC websites with regard to *Technical Bulletins (White Papers)* and alignment with Society positions, policy, or opinions

TCs are allowed to develop Technical Bulletins - A Technical Bulletin does not result from a technical meeting and is a brief 1-2 page statement on a special interest HVAC&R topic that has been developed by either a technical or grassroots committee of ASHRAE. After the TC approves the Technical Bulletin, TAC is responsible for coordinating a peer review by a minimum of three persons with expertise in the field of the bulletin before it can be posted. In addition, ASHRAE's policy for websites states the following: **"4 (3) f. Statements and presentations may not appear on web sites that state, purport, or imply that they present ASHRAE positions, policy, or opinions."**

8. TC E-mail Position Aliases Annual Update

SY 17-18 TC Position e-mail alias addresses for the mandatory positions of the Technical Committee management team (Secretary, Standards Sub. Chair, Program Sub. Chair, Handbook Sub. Chair, and Webmaster) will stay in effect until July 1st. The 17-18 E-mail Alias list with these position aliases is posted on the ASHRAE website www.ashrae.org/TCs under the heading *Procedures, Forms & Information for TCs/TGs/MTGs and TRGs*. The new SY 18-19 E-mail Alias list will be posted in the same location shortly after the Houston meeting.

9. TC MOP (Manual of Procedures)

TAC has restructured the TC MOP so that it is easier to navigate and find information. The new TC MOP can be found on the ASHRAE website www.ashrae.org/TCs under the heading *Procedures, Forms & Information for TCs/TGs/MTGs and TRGs*.

10. Distribution of TC minutes changed in TC MOP

The TC MOP and *TC/TG/MTG/TRG Minutes Cover Sheet* form have both been updated and you are no longer required to send the TAC chair a copy of your minutes after each meeting. The new minutes cover sheet can be found on the ASHRAE website www.ashrae.org/TCs under the headings *Procedures, Forms & Information for TCs/TGs/MTGs and TRGs – Routine Forms for TC/TG/MTGs/TRGs*.

11. How to Import Your TC Roster Information into MS-Outlook

Detailed instructions on how to import your TC roster information into MS-Outlook has been created and an e-mail announcement will be issued to all TC chairs, vice chairs, and secretaries once these instructions and the restructured TC MOP are posted to the TC page of the website (www.ashrae.org/TCs)

12. Updated TAC Presentation Template Available for TC members to use with local Chapter

TAC recently updated the standard presentation and presentation notes that TC members can use, without a lot of effort, to explain what TCs do for the Society and how that work benefits members in your local ASHRAE Chapter. You should also know that use of this presentation at a chapter meeting in SY 18-19 will earn a chapter 50 (100 points maximum) PAOE points.

The new presentation and presentation notes files are posted now at the following link www.ashrae.org/tcs under the heading *General TC Information* at the top of the page in case you prefer to direct others to these files posted online. The presentation material is now also available in both English and Spanish.

13. Basecamp Information from ECC

More and more TCs and standing committees are making use of ASHRAE's subscription to Basecamp3 to better organize, store, and distribute on-line committee files that are needed for their meetings through a dedicated committee Basecamp site. If you would like to learn more about Basecamp and how to request a site for your particular committee, please go to the Electronic Communications Committee (ECC) web page: (<https://www.ashrae.org/communities/committees/standing-committees/electronic-communications-committee>) and scroll down to the section titled *Basecamp Guidance*

14. Notes from TAC / SSPC 90.1 Interface Meeting in Chicago & TC Survey Responses prior to Chicago.

See meeting notes at the end of this document for additional information and for written responses to individual comments from TCs that responded to survey prior to the Chicago meeting.

B. AT THIS MEETING

1. On-Site Training Options

i. TC/TG/TRG Chair's Training Workshop Reminder

Sunday June 24th, 9:45-10:45 AM in Room #382A, 3rd Floor, in the George R. Brown Convention Center (GRBCC). The training will start with a brief presentation on how to run Effective Meetings and then highlight some of the online resources that are available through the TAC training portal for additional training and information on a variety of topics. The training session will also have a Q&A session so that you can also get answers to your specific questions.

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ii. **RAC's Research Subcommittee Chair's Breakfast**

Monday, June 25th, 6:30 AM – 9:30 AM in BOA DEF room, 2nd Floor, Hilton Hotel.

Please encourage your Research Subcommittee Chair or another representative from the TC to attend this meeting so that your RAC Research Liaison (RL) can get an update on the TC's research activities and so that your RL can help resolve issues & questions that TC may have concerning their research program. The training portion of this meeting will focus on the various ASHRAE *research grant and award programs and RAC announcements on upcoming deadlines and other items.*

iii. **TC Program Subcommittee Chair Training in St. Louis**

Tuesday, 6/26, 11:15 AM – Noon, Room #382C, 3rd Level, in the George R. Brown Convention Center (GRBCC). *Don't complain about the meeting program and your TC's submissions if you have not been to training.*

A few things you might learn in training are as follows:

- Incomplete program submissions is the biggest reason for rejection now. All information is needed up front for CEC selection process.
- A packaged session on a similar topic is the best way to greatly improve your chances for acceptance.
- There is no difference in how CEC handles 60 and 90 minute program slots. 60 minute slots are just as good as 90 minute slots if complete.

iv. **Workshop 6 – Speaking the Same Language: Best Practices in Standards**

Authoring – Mon. 6/25, 11 AM – 12 PM – Room 372AD, 3rd Floor, GRBCC – Sponsor; TC 1.6 Terminology – **Printed program lists this workshop by mistake as being held on Wednesday, 6/27**

v. **Handbook Training for TCs** - 8:00 to 9:00 a.m. - Room: 327 (3rd Floor)—Hilton

This session will cover the ASHRAE Authoring Portal for collaborative work on Handbook chapters or other publications. The session will also show new TC Handbook chairs (and TC chairs) what they need to know about Handbook chapter development and revision—the process, the product, and how to succeed. Includes time for Q&A and discussion.

2. **Location of Section Head Mailboxes & Free Wi-Fi Access at this Society meeting**

Mailboxes are located just outside ASHRAE Headquarters Office (343 A & B – 3rd floor) – Hilton Hotel).

Also, Internet access and computers for e-mail are available in the Cyber Café located in the registration area during operating hours. Please be considerate to others and limit your usage to five minutes.

Wireless internet will be available in all meeting rooms at the Hilton Hotel, and George R. Brown Convention Center (GRBCC). ASHRAE will be working with the internet provider to manage the bandwidth so that member expectations of accessibility and

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speed are fulfilled. We would like to request that everyone limit their usage to functions that do not use excessive bandwidth. Applications such as Facebook, YouTube, streaming video, etc. use excessive bandwidth.

Hilton & GRBCC Wi-Fi Access: Network Name: ASHRAE2018, Username: ASHRAE2018, PWD: houston18 (both case sensitive).

3. RPM (Remote Participation Meetings) being held in Houston

The 14th RPM (Remote Participation Meeting) Capable Society Meeting, which allows some TC members to participate in the TC meeting from a remote location electronically, will occur in Houston and the following fourteen TCs have asked to participate in this effort: TC 1.9, TC 2.6, TC 4.2(4), TC 4.3, TC 4.7, TC 5.11, TC 6.6(2), TC 7.3, TC 8.12, TC 9.2, TC 9.3(4), TC 9.4, TC 9.8(4), and TC 10.6 – Many of the TCs host their main Meeting and Subc. Meetings now using RPM capability as noted above parenthetically. A total of 35 RPM meetings will be hosted in Houston when you include project committee and other committee meetings. For comparison, a total of 43 RPM meetings were hosted in Long Beach last year at this time.

The chairs of those TCs participating should provide to their Section Head feedback on their RPM meeting experience before TAC meets on Wednesday morning, 6/28.

4. Retiring TC/TG/TRG/MTG Chair Certificates

TC chairs that are completing their terms as chair at this Society meeting will be presented with a certificate of appreciation. Please coordinate with your Section Head as to when and where at the meeting you would like to be presented with the certificate (Section meeting or TC meeting).

C. UPCOMING DEADLINES

1. TAC Survey on TC Strengths – Weaknesses – Opportunities and Threats (SWOT)

Please Ask Your TC Membership to Participate in the before Wednesday, 6/27/18 using the following survey link: <https://www.surveymonkey.com/r/S9LRZKB>

2. TC Activity Forms for the Houston Meeting are due to Your Section Head before Wednesday, 6/27/18

TC/TG/TRG Activity Feedback Form (Excel) can downloaded from the Technical Committee webpage under the “TC Forms and Documents” page - <https://www.ashrae.org/standards-research--technology/technical-committees/tc-forms-and-documents>. Section heads can also provide an electronic copy of the form if requested.

3. Thank You Letters to Employers

ASHRAE President – Bjarne Olesen – has offered to send letters to the employers of TC volunteers this year thanking them for supporting their employee’s service on an ASHRAE TC during Society year 2017-2018. If requested by the volunteer, the letter will be sent to his/her employer by the end of July or early August and the volunteer will receive a copy.

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Please let your committee members know that they will be receiving an email about employer thank you letters in early July with details on how to request a thank you letter.

4. Seminar and Forum proposals for Atlanta are due by Friday, August 3rd, 2018.

Please visit the following site to submit your proposal:

For more information, go to: www.ashrae.org/atlanta

5. 2018-2019 Hightower Award & Service to ASHRAE Research Award Nominations by Friday, September 1st

Nominations for the 2018-2019 *George B. Hightower Technical Achievement Award* are due to you Section Head by September 1, 2018. The award recognizes outstanding technical leadership and contributions on a TC/TG/TRG during the past four years, excluding research and standards activities. Please go to the Technical Committee page of the ASHRAE website at the following link under the "Procedures, Forms..." heading:

<http://www.ashrae.org/tcs>

Nominations for the 2018-2019 *Service to ASHRAE Research Award* for TC volunteer efforts in research are due to RAC research liaison by September 1, 2018. Please go to the Research page of the ASHRAE website at the following link under the "Research Grants and Awards" heading: <http://www.ashrae.org/research>

6. 2018 RPM (Remote Participation Meetings) Request for Chicago Meeting

RPM Meetings at ASHRAE Winter Conference in Atlanta

- RPM meetings are not automatically assigned; you must request the RPM meeting every meeting.
- If you think you might need an RPM meeting in Atlanta, please submit your request via the committee meeting room request link on the ASHRAE website before the submission deadline of **Friday, October 5th**
- Use the form for Technical Committees under the Committee Meetings accordion.
- Requests should be received by the deadline set by ASHRAE meetings staff.
- Please provide the reason for your RPM request in the box provided on the form.
- Everyone who requests an RPM meeting will get an email to confirm their request 4 to 6 weeks prior to the ASHRAE conference.
- If your committee no longer needs the RPM, please let us know in response to the confirmation request so we can provide RPM access to other committees that have requested during the same time slot.
- The final RPM meeting schedule will be sent out 1 to 2 weeks prior to the start of the ASHRAE conference.
- Please note that Sunday, Monday, and Tuesday tend to overbook and requests may need to be prioritized.
- Scheduling priority will be given to committees that are trying to meet quorum and who are up to date on deadlines and meeting notes.
- Last minute requests are very hard to accommodate and priority will be given to emergency situations.

D. REMINDERS

1. Useful TC/TG/TRG/MTG Chair Information and forms on ASHRAE website

Information for TC/TG/TRG and MTG chairs can be found on the Technical Committee page of the ASHRAE website at the following link: <http://www.ashrae.org/tcs>

2. Request for each TC to briefly review ASHRAE Code of Ethics at start of meeting

See the following link for the latest version of the ASHRAE Code of Ethics:
<https://www.ashrae.org/about-ashrae/>

3. Make a Special Effort to welcome new Members, and Visitors to TC meeting

Potential new members for your committee have been encouraged to drop-by your meeting. As a result, please make a special effort to recognize and warmly welcome all visitors to your meeting – A TC can never have too many willing and able volunteers.

4. Option for TC Subcommittee Meetings via Conference Calls and Web Meetings

More and more TCs are taking advantage of a new Society service that allows TCs to hold subcommittee meetings by phone and/or web. Many TCs are finding this to be a more efficient way for them to conduct subcommittee business and it also allows TC members that can't travel to meetings on a regular basis a way to still contribute to the TC. Such a change can also eliminate potential conflicts with the TC's program sessions at Society meetings. Please pass your conference call/web meeting/webinar requests on to the Manager of Research and Technical Services, Mike Vaughn, at mvaughn@ashrae.org or MORTS@ashrae.net

5. Is Your Committee Website up to Date?

If not, please ask your webmaster to at least post the latest minutes and the Houston meeting times and agenda. If your website has been neglected, add an action item for this meeting to appoint a responsible member of the TC/TG/TRG who will bring it back to life. The new TC website template has greatly simplified the duties of the TC webmaster and this form of communication is critical to the efficient operation of your committee, and for attracting new members.

The recent conversion to a new TC website platform highlighted a couple areas where a refresher of the ASHRAE rules on website maintenance is warranted. First be aware that ASHRAE Products (i.e., handbook chapters, journal articles, final reports from research projects, etc.) cannot be published on your TC's website. It is very appropriate to post the title and scope of the product and then link the reader to the ASHRAE bookstore or other location on the ASHRAE site where the product may be purchased. Any possible exceptions to this rule must be sent through Mark Owen for review and approval (mowen@ashrae.org). The second issue involves timely posting of the draft minutes. Draft minutes (and final, approved minutes from the prior meeting) should be posted to your website (or otherwise distributed to the members) within 60 days after the meeting. Please ensure that your secretary and webmaster are aware of this deadline. To assist your secretary in understanding the procedures for taking and reporting

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minutes, a video has been developed and posted on the Technical Committees' Training page (<http://www.ashrae.org/tcs>). On the same page, a video has also been posted for use by webmasters to learn about the procedures and schedule to maintain the new websites.

6. **TC 2018-2019 Master Calendar – Now Available through Google** - The Technical Committee Master Calendar is now available through Google. In order to access this calendar you need to have a Google account.

Once you log into your Google account, follow the instructions below:

To add a friend's calendar, just follow these steps:

- At the bottom of the calendar list on the left, click Add and select Add a friend's calendar.
- Enter the appropriate email address (techservices1791@gmail.com) in the field provided, then click Add.

This calendar is public and will appear under 'Other Calendars' in the left column.

To set up Google Calendar Sync to your Outlook:

- Make sure you're using a supported operating system and Outlook version.
- Download Google Calendar Sync (version 0.9.3.6) at
- http://dl.google.com/googlecalendarsync/GoogleCalendarSync_Installer.exe
- Once a dialog box appears, click Save File. The downloaded file should open automatically. If it doesn't, manually open it from your browser's download window.
- Click OK to confirm that you're aware this is an executable file.
- Read through the Google Calendar Sync Terms of Service, and click I Agree.
- Follow through the Installation Options and click Install to finish the set-up process.

Once Google Calendar Sync is installed on your computer, the Google Calendar Sync Settings window will appear:

In the Settings window, enter your email address and password and select the Sync Option you prefer. Read about each Sync Option.

You'll also be able to set the time interval for syncing to occur. Please keep in mind that 10 minutes is the minimum time interval allowed.

After the initial set-up, you can access the Google Calendar Sync Settings window again by double-clicking the calendar icon in your Windows System Tray.

E. RECENT ANNOUNCEMENT

1. CEC's Standing Request for Future Society Meeting Program Track Suggestions

The Conferences and Expositions Committee (CEC) oversees ASHRAE's annual and winter conferences and other specialty conferences and expositions globally. The CEC continually works to improve the conference experience for all attendees. To help keep a "pulse" on the technical issues facing professionals in the HVAC&R marketplace, and to create meetings that reach all of ASHRAE's constituencies, the CEC seeks ideas for tracks for the Orlando 2020 winter meeting and annual and winter conferences beyond as well as topics for specialty conferences from TC members.

Please submit your suggestions to ASHRAE Staff member Tony Giometti (Giometti@ashrae.org). You can also add your track suggestion in the "Comment" section of the TC Activity form for the Houston meeting.

2. CEC Always Seeks TC Volunteers willing to Support Content Development and Quality Control for Society Technical Program at Society Meetings

Provide to your Section Head after each Society meeting a list of qualified volunteers from your TC that are potential Technical Session chairs and reviewers of session papers that are related to TC's scope for use by the Conferences & Expositions Committee (CEC) in developing technical content for future technical programs.

3. The Professional Development Committee (PDC) is seeking ideas for new ASHRAE Learning Institute (ALI) courses.

The Professional Development Committee (PDC) is actively seeking ideas for new ASHRAE Learning Institute (ALI) courses. We need practical courses of broad interest to be presented as face-to-face seminars or short courses, instructor-led online courses and self-paced courses. Examples include courses with a focus on new technologies that need to be shared, fundamentals for engineers new to the discipline, standard applications that need explanation, and courses based on new design guides. Does your TC have a potential course idea?

Contact Karen Murray (ASHRAE staff) kmurray@ashre.org or Charlie Henck (2018-19 PDC chair) PDCchair@ashrae.net with your course ideas.

F. CURRENT & UPCOMING ASHRAE CONFERENCE PROGRAMS

1. Houston Annual Conference - June 23 – June 27, 2018

Conference Website: <https://www.ashrae.org/conferences/annual-conference>
Conference Program Chair: Cynthia Moreno

Program Focus at Long Beach Annual Conference

- i. Track 1: HVAC&R Systems and Equipment
- ii. Track 2: Fundamentals and Applications

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- iii. Track 3: District Energy and Cogeneration Plants
- iv. Track 4: HVAC & Resiliency: Safeguarding our World
- v. Track 5: Residential – Modern Building in Hot and Humid Climates
- vi. Track 6: Professional Skills
- vii. Track 7: Research Summit
- viii. Track 8: HVAC&R Control Freaks
- ix. Track 9: HVAC&R Analytics

2. Atlanta Winter Conference – Jan. 12 – Jan. 16, 2019

Seminar and Forum proposals for Chicago are due by **Friday, August 3, 2018.**

Conference Website: <https://www.ashrae.org/conferences/winter-conference>

Conference Program Chair: Corey Metzger

Program Focus at Atlanta Winter Conference

- i. Track 1: Systems and Equipment
- ii. Track 2: HVAC&R Fundamentals and Applications
- iii. Track 3: Refrigeration
- iv. Track 4: Construction, Operation, and Maintenance of High Performance Systems
- v. Track 5: Common System Issues and Misapplications
- vi. Track 6: The Convergence of Comfort, Indoor Air Quality, and Energy Efficiency
- vii. Track 7: Building Integrated Renewables and Natural Systems
- viii. Track 8: The Engineer's Role in Architecture

TC Meeting Room Request forms and RPM requests for Atlanta meeting are due **Friday October 5th.**

3. Kansas City Annual Conference - June 22 – June 26, 2019

Seminar and Forum proposals for Houston are due by **TBD.**

Conference Website: [TBD](#)

Conference Program Chair: TBD

Program Focus at Kansas City Annual Conference:

Current Conference Tracks:

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- Fundamentals and Applications*
- HVAC&R Systems and Equipment*
- Professional Development*
- Research Summit*

*indicates Tracks that will be part of the Program

Potential Additional Track Ideas:

- Optimization in HVAC&R
- Commissioning/Continuous Commissioning/Automated Fault Detection
- Modeling Throughout the Building Life Cycle
- Hydronic System Design
- Existing Buildings
- High Performance from Energy Intensive Building Types
- Energy Efficiency & Renewables
- Energy Recovery and Cascade Systems
- Building Certification and Operating Metrics
- Ground-Coupled Systems
- Life Safety
- Indoor Air Quality

Final list of tracks for Kansas City meeting will be finalized by the Conferences & Exposition Committee in Houston.

G. OTHER UPCOMING WORKSHOPS, CONFERENCES AND EVENTS

1. 2018

- i. **EPRI Electrification 2018 International Conference & Exposition** – August 20 to 23, 2018 – Long Beach, CA USA
<https://www.ashrae.org/conferences/ashrae-endorsed-conferences/epri-electrification-2018-international-conference-exposition>
- ii. **1st IIR International Conference on the Applications of HFO Refrigerants** Sep. 2 to 5, 2018 – Birmingham, England
<https://www.ashrae.org/conferences/ashrae-endorsed-conferences/1st-iir-international-conference-on-the-applications-of-hfo-refrigerants>
- iii. **2018 JSRAE Annual Conference** – Sep. 4 to 7, 2018 - Fukushima 963-8642, Japan – Contact: <https://www.ashrae.org/conferences/ashrae-endorsed-conferences/2018-jsrae-annual-conference>
- iv. **IBPC 2018** – Sep. 23 to 26, 2018 – Syracuse, NY USA – Contact: <https://www.ashrae.org/conferences/ashrae-endorsed-conferences/ibpc-2018>

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- v. **Building Simulation 2018** – Sep. 26 – Sep. 28, 2018 – Chicago, IL USA – Contact:
<https://www.ashrae.org/conferences/topical-conferences/2018-building-performance-analysis-conference-and-simbuild>
- vi. **AHR Expo-Mexico** - October 2-4, 2018 – Mexico City, Mexico -
<https://www.ashrae.org/conferences/ashrae-endorsed-conferences/ahr-expo-mexico>
- vii. **The Third International Conference on Efficient Building Design – Materials and HVAC Equipment Technologies** - October 4–5, 2018 - Beirut, Lebanon
<https://www.ashrae.org/conferences/topical-conferences/the-third-international-conference-on-efficient-building-design>
- viii. **AHR Expo 2019** – Jan. 14 to 16 – Atlanta, GA USA – Contact:
<https://www.ashrae.org/conferences/winter-conference/ahr-expo>
- ix. **ICR 2019** – August 24-30, 2019 – Montréal,, Québec, H2Z 1H2, Canada – Contact:
<https://www.ashrae.org/conferences/ashrae-endorsed-conferences/icr-2019>

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Meeting Notes

ASHRAE Technical Activities Committee Interface Meeting with SSPC 90.1

Monday, January 22, 2018

Note: This meeting was held to discuss ongoing concerns between the Technical Committees and SSPC 90.1 leadership. The group reviewed TCs responses to a survey issued prior to the meeting, and formulated responses. The following were present at the meeting:

Attendees:

Drake Erbe, Chair SSPC 90.1

Richard Lord, Vice-Chair SSPC 90.1

Tom Culp, Vice-Chair SSPC 90.1

Kelley Cramm, Chair TAC

Tom Justice, Vice-Chair TAC

Bert Phillips – TAC Section 2 Section Head

Krishnan Gowri – TAC Section 9 Section Head & SSPC 90.1

Mark Smith – TC 5.2 Liaison to SSPC 90.1)

Steve Ferguson, ASHRAE Senior Manager of Standards

Mike Vaughn, ASHRAE Senior Manager of Research and Technical Services

Connor Barbaree, ASHRAE Manager of Codes

The group had some discussion regarding the process for a TC to establish a liaison to SSPC 90.1 The process appears to be somewhat cumbersome. The TCs don't hear back from the 90.1 committee in a timely manner. The process seems secretive to the TCs. Drake noted that the 90.1 committee has a process which they must follow and it includes establishing copyright paperwork before an individual is allowed to join the committee. The TC should vote on a liaison and then the TC Chair should send an email to the 90.1 Chair informing them of the vote. The liaison should go ahead and attend the 90.1 meeting. Drake will check to see if the 90.1 committee can establish a "provisional liaison" which would allow the TC representative to participate prior to final approval.

The following question was sent to TC Chairs:

"As a TC Chair, what issues or concerns do you have with the current version of Standard 90.1 or with the development process for Standard 90.1? (Please include TC number in response)"

1. From TC 5.1:

Effectiveness of the limitations in the fan and fan systems energy use. 1/4/2018 8:13 PM

Response from TAC/SSPC 90.1:

TC 5.1 needs to assign a formal liaison to SSPC 90.1 so they can give input on this subject.

2. From TC 4.1:

None in particular, but continuing to keep documents like these as simple and straight-forward as possible is always an interest to our committee. Also continuing to bear in mind that peak load calculation and energy calculations are uniquely separate exercises is important. Unfortunately we cannot send someone to the working group because this is the time slot for our main committee meeting. 1/2/2018 11:10 AM

Response from TAC/SSPC 90.1:

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Acknowledged. Thank you for your input.

3. From unidentified TC:

No particular issues with the current version or development process. Just a continuous concern for the ASHRAE 90.1 committee to continue to provide a path for minimally compliant equipment.

12/27/2017 2:35 PM

Response from TAC/SSPC 90.1:

Please note that there is a new compliance path using Appendix G.

4. From TC9.2:

The biggest concern I have is we still need clear recognition that safety concerns for Industrial applications need to be met before energy efficiency goals are applied.

12/13/2017 11:33 AM

Response from TAC/SSPC 90.1:

Safety is always a priority over energy savings. The standard agrees.

5. From TC 8.02:

Impact of centrifugal chiller efficiency on customers and manufacturers 12/8/2017 8:45 AM

Response from TAC/SSPC 90.1:

The efficiency requirements were extensively cost justified with input from AHRI.

6. From TC 7.6 (Building Energy Performance):

While our TC is cognizant for Std. 90.1, which we follow regularly, our focus is on how the design elements of 90.1 are implemented in occupied buildings and whether they in fact produce energy savings. Our main concern is verifying that 90.1 is implemented in buildings deemed to be in compliance; how can we show, using measured data, that 90.1 does in fact lead to the lower EUIs projected by analysis? While this may not be within the scope of 90.1 we all should be concerned about this. As for the 90.1 development process our only concern is how do we get TC 7.6 members interested enough to get involved in SSPC 90.1 working groups or subcommittees? The development process seems to be quite rigorous and adequate; it is slow but needs to be to be thorough and to maintain quality. 12/7/2017 10:55 AM

Response from TAC/SSPC 90.1:

There are 2 liaisons from TC 7.6 that have not yet participated. We encourage them to do so. The DOE is working on a study to determine if buildings are actually saving energy. Please follow DOE "Commercial Buildings Energy Code Field Study".

7. From TC9.10:

Not sure if 90.1 folks fully understand consequences of some energy saving ideas on the safety and function of lab spaces. We have a liaison, but the interaction can be spotty. 12/4/2017 5:25 PM

Response from TAC/SSPC 90.1:

Please submit a proposal to the 90.1 committee if you see problems with lab safety created by the standard.

8. From TC 3.2 (Refrigerant System Chemistry):

Does not get into energy efficiency requirements. 12/4/2017 10:51 AM

Response from TAC/SSPC 90.1:

No response

9. From TC 2.08:

Focuses on building sustainability and has direct correlation with 90.1. In addition, the Green guide by TC 2.08 is directly influenced by 90.1. Hence TC 2.08 would suggest a more inclusive standard development process wherein we are more involved. 12/4/2017 1:33 AM

Response from TAC/SSPC 90.1:

Please assign 1 or 2 liaisons to actively participate in the 90.1 committee.

10. From MTG.OBB:

Standard 90.1 has evolved for a long history. I am concerned about the new developments focus on many small issues and making the standard too complicated for code officials and energy modelers, while ignoring key drivers of actual energy use in buildings. Static data and simplified assumptions have been used in energy modeling and simulations to calculate energy use of buildings and evaluate technology performance before technology measures get adopted in the standard. No considerations have been given to variation of weather data due to climate change, actual problems in buildings (operation and maintenance issues), and stochastic of energy-related occupant behavior in buildings. 12/4/2017 1:32 AM

Response from TAC/SSPC 90.1:

Please reach out to the 90.1 committee leadership so we can work together.

11. From TC 7.3 Operations and Maintenance:

Although Standard 90.1 is more catered to the designer than the facility manager and operator, input from the TC on life cycle considerations, which may result in energy efficiencies, might be helpful. 12/3/2017 9:40 PM

Response from TAC/SSPC 90.1:

This happens at the building permit time frame so ongoing operations, maintenance, and commissioning are not addressed in the standard. The 90.1 committee would love to have more end users involved.

12. From TC 9.07 Education Facilities:

90.1 is highly biased to commercial buildings, or better stated, not structured to be inclusive of diversity of buildings found on college and university campuses. Applying the requirements of the code generally intended for commercial structures creates challenges for higher education. A performance based alternative (not the ECB method) to the prescriptive method would be valuable. Universities, colleges, and K-12 if had the flexibility to design, model, and operate building assets based upon a performance threshold (not a high performance building, but a reasonable baseline 20-30% better than the median of the appropriate building stock), this would allow for owners and

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designers to incorporate innovative technologies and practices to achieve greater energy efficiency without financial constraints of prescriptive measures. The diverse buildings types of most benefit include sporting arenas / stadiums, science & research laboratories, large auditoriums, student recreation spaces, student services buildings unions with food service, etc. 12/3/2017 7:09 PM

Response from TAC/SSPC 90.1:

We agree; the 90.1 committee has limitations and can't address multiple building types individually.

13. From TC 6.6, Service Water Heating:

We have representation on the committee via a liaison, so I feel like our TC is abreast of happenings. Committee members frequently express concerns that hot water energy consumption is not covered to the detail needed, but I am not sure how involved those members have been in 90.1 development. 12/3/2017 10:55 AM

Response from TAC/SSPC 90.1:

We now have a liaison from your committee. We appreciate the help we're receiving from TC 6.6.

14. From TC 1.6:

Would like greater harmonization of terms (glossary) between 90.1 and other ASHRAE stds/guidelines and iccc and appraisers. 12/3/2017 12:06 AM

Response from TAC/SSPC 90.1:

We agree. The committee always attempts to align definitions but since many industry standards/codes/guidelines don't align, this task is not always working. We always look at ICC definitions but can't always align them.

Conferences and Expositions Committee Information Items for Technical Committees 2018 Annual Conference, Houston, Texas

This “handout” includes recent updates and upcoming deadlines in the preparation of the technical program for the Winter, Annual and Topical conferences. It is being provided in advance of the conference for your information so that it does not have to be presented during the onsite TC section breakfasts. CEC will provide a short update at the TC breakfasts and answer any questions. *Kevin Marple, 2017-2018 CEC Vice Chair, kmarple@benzco.com*

1. 2019 Annual Conference Research Summit Call for Papers

The 2019 Annual Conference in Kansas City, MO features a call for papers for the Research Summit track. Please consider submitting papers or groups of papers as entire sessions from your TC for the conference. Abstracts are due August 21, 2018. If you have any questions, please contact Melanie Derby, the Research Summit Track Chair at derbym@ksu.edu

2. Student Authors Recognized at 2018 Annual Conference

Starting at the 2017 Winter Conference, CEC began recognizing student papers. Certificates were awarded to students at their assigned conference paper session. Certificates in the categories “*Best Paper*” and “*Honorable Mention*” were presented to graduate candidates and PhD candidates.

Four students will be recognized with CEC student paper awards at the 2018 Annual Conference.

3. Program statistics for Houston; for a total of 108 available slots:

Conferences Papers

- 127 conference paper abstracts submitted, 105 approved
- 67 conference papers presented
- 20 Conference Paper Sessions

Technical Papers

- 21 Technical papers received
- 14 Technical papers presented
- 4 Technical Paper Sessions

Seminars

- 100 submitted
- 72 presented

Workshops

- 9 submitted
- 7 presented

Forums

- 11 submitted
- 4 presented

Debates

- 2 submitted
- 1 presented

Panels

- 4 submitted
- 1 scheduled (withdrawn)

4. 2019 ASHRAE Winter Conference in Atlanta, January 12-16:

<http://www.ashrae.org/atlanta>

- a. Conference Papers are due July 9
- b. Seminar, Forum, Debate, Panel and Workshop proposals are due August 3
- c. Program notifications go out September 14
- d. Web site opens for presentation uploads on November 30
- e. All presentations due online January 4, 2019

2019 Winter Conference Chair is Corey Metzger, corey.metzger@resourcece.com

Tracks and Track Chairs

Track 1: Systems and Equipment

Joe Firrantello, j.firrantello@gmail.com

Track 2: HVAC& R Fundamentals and Applications

Rick Hermans, herma015@umn.edu

Track 3: Refrigeration

Sonya Pouncy, sonya.pouncy@gmail.com

Track 4: Construction, Operation and Maintenance of High Performance Systems

Leticia De Oliveira Neves, leneves@gmail.com

Track 5: Common System Issues and Misapplications

Lee Riback, lee.riback@gmail.com

Track 6: The Convergence of Comfort, Indoor Air Quality and Energy Efficiency

Ashish Rakheja, ashish.rakheja@aeonconsultants.in

Track 7: Building Integrated Renewables and Natural Systems

Maggie Moninski, maggie.moninski@gmail.com

Track 8: The Engineer's Role in Architecture

Ashu Gupta, ashu.energy@gmail.com

5. **2019 ASHRAE Annual Conference in Kansas City, MO:** www.ashrae.org/kansascity
 - a. Conference Paper Abstracts, Technical Papers and Paper Session requests due August 21, 2018
 - b. Conference Papers due November 30, 2018

2019 Annual Conference Chair is Carrie Anne Monplaisir, carrie.monplaisir@gmail.com

Tracks and Track Chairs

Track 1: Systems & Equipment in the Built Environment

Kimberly Pierson, kdpwildcat@gmail.com

Track 2: Fundamentals and Applications

Gary Debes, gary.debes@comcast.net

Track 3: Optimization in HVAC&R

Vikrant Aute, vikrant@umd.edu

Track 4: Commissioning New & Existing Buildings

Raul Simonetti, raul.simonetti@carel.com

Track 5: Occupant Health & Safety

Chris Reinders-Caron, creinders@cannondesign.com

Track 6: Modeling Throughout the Building Life Cycle

Nivedita Jadhav, nivi2307@gmail.com

Track 7: Professional Development

Rich Rose, richr@mticontrols.com

Track 8: Research Summit

Bing Liu, bliu@neea.org

Track 9 (Mini-Track): Radiant Heating & Cooling Mini-Track

Devin Abellon, devin.abellon@yahoo.com

6. Potential Sources Bias Disclosure

In accordance with the ASHRAE Code of Ethics, speakers have been asked to fill out a potential sources bias disclosure document that will note affiliations/ involvement with any organizations with financial or commercial interest in the subject matter to be discussed.

7. TC Opportunities:

- a. TC members who want to submit a program should consult the Track Chair for assistance in preparing a good abstract, learning objectives, and Q&A to help assure complete submission.
- b. TCs and Sections are welcome to suggest new presentation formats (like how the Workshop was born). Best way to present material to benefit attendee is a goal.
- c. TCs and Sections are encouraged to work with a track chair to put together a series of sessions that can be used as a mini-track.
- d. Putting together an entire track of programs in cooperation with other TCs is also encouraged; keeping in mind that track subjects are typically determined 14-15 months prior to a conference.

8. CEC Announces a Call for Reviewers and Paper Session Chairs

ASHRAE has a number of conferences coming up that include papers, and CEC seeks your help in reviewing them. Additionally opportunities to chair a paper session are available. Specifically, there is an immediate need for reviewers and session chairs for the 2019 Winter Conference and various topical conferences.

Please submit your interest in reviewing a paper or chairing a paper session using the online form: http://web.ashrae.org/cec_request/. Please contact Tiffany Cox, ASHRAE Assistant Manager, Conference Programs, at tcox@ashrae.org for more information.

9. Topical Conferences

ASHRAE's topical conferences are focused on a particular aspect of the industry and bring together professionals for networking and professional development. Two topical conferences are available for the remainder of 2018.

2018 Building Performance Analysis Conference and SimBuild, co-organized by ASHRAE and IBPSA-USA

<http://www.ashrae.org/BuildPerform2018>

September 26-28, 2018, Chicago, Illinois

The conference program includes peer-reviewed papers, non-paper presentations and new program format types as well as the fourth annual ASHRAE LowDown Showdown modeling competition with a record 14 teams competing.

The Third International Conference on Efficient Building Design

<http://www.ashrae.org/Beirut2018>

October 4–5, 2018, Beirut, Lebanon

The conference is to present advanced research on the topics of advanced building and bioclimatic designs for attaining occupant comfort and good environmental quality addressing systems and technologies adapted to the Arab region in both moderate and hot humid climates.

10. Program Types

Technical Paper Session:

These sessions present papers on current applications or procedures, as well as papers resulting from research on fundamental concepts and basic theory. Papers presented in these session have successfully completed a rigorous peer review. Forms for written comment are available at each session, and sent to respective authors for reply and publication in ASHRAE transactions, if received by a certain date.

Conference Paper Session:

These sessions present papers on current applications or procedures, as well as papers reporting on research in process. These papers differ from technical papers in that they are shorter in length and undergo a much less stringent peer review.

Seminar:

These sessions feature presentations on subjects of current interest. There are not papers attached to seminars.

Workshop:

These sessions enable technical committees and other ASHRAE committees to provide a series of short presentations on a topic requiring specific expertise. These short presentations are provided with an increased emphasis on audience participation and training in a specific set of skills. There are not papers attached to workshops.

Forum:

The sessions are “off-the-record” discussions held to promote a free exchange of ideas. Reporting of forums is limited to allow individuals to speak confidentially without concern of criticism. There are not papers attached to forums.

Panel Discussion:

Panel discussions can feature a broad range of subjects and explore different perspectives on industry related topics. This session format includes a panel of 3-4 speakers each addressing a facet of the session topic, followed by an interactive discussion lead by the session chair. Panel Discussions may be 60 minutes or 90 minutes in length and will be posted online in the Virtual Conference.

Debate:

Debates highlight hot-button issues commonly faced by our membership. Industry experts, either on teams or as individuals, argue opposing sides of an issue, concluding with position summaries and audience feedback. Debate sessions may be 60 minutes or 90 minutes in length and will be posted online in the Virtual Conference.

Appendix B: TC4.3 Honors & Awards Report



TC 4.03 Honors & Awards Report

2018 Annual Meeting, Houston

Deadlines that occur before the next meeting (January 2019 Atlanta) are listed as action items in red below.

George B. Hightower Award:

- *Recognizes excellence in volunteer service in the area of Technical Committee, Technical Group, and Technical Research Group activities, excluding Research & Standards (which have separate awards).*
- **ACTION ITEM:** Nominations are due September 1 each year. TC 4.03 tends to be very active in Research, and research participation is excluded from the Hightower Award because there is a separate "Service to ASHRAE Research" award. Same with Standards participation. Nonetheless, I would like to submit our strongest candidate each year. Please help me identify a qualified candidate.
- Past winners from TC 4.03 (who are therefore ineligible): Stephen Duda (2016); John Carter (2015).

Service to ASHRAE Research Award:

- *Recognizes excellence in volunteer service in the area of Society research. Desirable qualities include authorship of RTARs and Work Statements, participation or chairing of multiple PMS and PES, and Research subcommittee work including Research Subcommittee Chair. This award is for a volunteer in support of Research, not a paid researcher and not a donor to ASHRAE Research.*
- **ACTION ITEM:** Nominations are due September 1 each year. Please help me identify a qualified candidate.
- Past winners from TC 4.03 (who are therefore ineligible): Iain Walker (2015); Steve Taylor (2011).

ASHRAE Fellow:

- *Recognizes distinction in the arts relating to the sciences of heating, refrigeration, air conditioning or ventilation, or the allied arts and sciences, or in the teaching of major courses in said arts and sciences, or who by reason of invention, research, teaching, design, original work, or as an engineering executive on projects of unusual or important scope, has made substantial contribution to said arts and sciences, and has been in good standing as a full grade Member for at least ten (10) years is eligible for election to the grade of Fellow.*
- **ACTION ITEM:** New nominations are due December 1 of each year. Please help me identify suitable candidates from this TC, including yourself if you feel you are eligible.

Distinguished Service Award:

- *Recognizes members who have served ASHRAE faithfully as a member of committees or otherwise giving freely of his/her time and talent on behalf of the Society. Lifetime cumulative points-based system with a minimum of 15 points required (with points in 3 different categories). The points tally sheet is available on the ASHRAE website or directly from me.*
- Recipient from TC 4.03 this year: Congratulations to **Michael Blanford!** He receives his award at the Saturday Plenary of this Conference. **Two additional TC 4.03 members** have been nominated this year, and those nominations are in process. If approved, presentation will be made one year from now at the 2019 Annual Conference Plenary in Kansas City.



- New nominations are due May 1 of each year. Self-nominations are permitted. Please help me identify additional suitable candidates from this TC, including yourself if you feel you are eligible and have not yet received this award. There is no quantity limit for nominees nor honorees.

Exceptional Service Award:

- *Recognizes members who have served the Society faithfully and with exemplary effort, far in excess of that required for the Distinguished Service Award.* Lifetime cumulative points-based system with a minimum of 45 points required (with at least 3 points in 3 different categories). The points tally sheet is available on the ASHRAE website or directly from me.
- Recipient from TC 4.03 this year: Congratulations to **Xudong Yang!** He receives his award at the Saturday Plenary of this Conference. **One additional TC 4.03 member** has been nominated this year, and that nomination is in process. If approved, presentation will be made one year from now at the 2019 Annual Conference Plenary in Kansas City.
- New nominations are due May 1 of each year. Self-nominations are permitted. Please help me identify additional suitable candidates from this TC, including yourself if you feel you are eligible and have not yet received this award.

Other Awards on my Radar: All of these are competitive awards, with a maximum of one/each chosen per year. Please send any suggestions of nominees to Steve Duda.

- **ASHRAE Award for Distinguished Public Service.** *Recognizes ASHRAE members who have performed outstanding public service in their community, and in doing so, have helped to improve the public image of the engineer.* **Nominations are due December 1 each year.**
- **Standards Achievement Award.** *Recognizes excellence in volunteer service for developing ASHRAE Standards and/or Guidelines.* **Nominations are due December 1 each year.** Past winners from TC 4.03 (ineligible again): Max Sherman (2014) and Steve Taylor (2012).
- **Andrew T. Boggs Service Award.** *Recognizes a past Exceptional Service Awardee for continued, unselfish, dedicated and distinguished service to the Society.* To be eligible, one must already have won the Exceptional Service Award. New nominations are due May 1 each year. Past winners from TC 4.03 (ineligible again): Steve Taylor (2017).
- **Louise & Bill Holladay Distinguished Fellow Award.** *Recognizes a Fellow of the Society who continues preeminence in engineering or research.* To be eligible, one must already be a Fellow of the Society. New nominations are due May 1 each year. Past winners from TC 4.03 (ineligible again): Steve Taylor (2016) and Max Sherman (2006).
- **F. Paul Anderson Award.** *Honors a member for notable achievement, outstanding work or service in any field of the Society. This is ASHRAE's highest honor.* **New nominations are due December 1 each year.** Past winners from TC 4.03 (ineligible again): Steve Taylor (2018).

Respectfully submitted by:

Stephen W. Duda

TC 4.03 Honors & Awards Chair

June 4, 2018

Appendix C: CEC Report

Conferences and Expositions Committee Information Items for Technical Committees 2018 Annual Conference, Houston, Texas

This “handout” includes recent updates and upcoming deadlines in the preparation of the technical program for the Winter, Annual and Topical conferences. It is being provided in advance of the conference for your information so that it does not have to be presented during the onsite TC section breakfasts. CEC will provide a short update at the TC breakfasts and answer any questions. *Kevin Marple, 2017-2018 CEC Vice Chair, kmarple@benzco.com*

1. 2019 Annual Conference Research Summit Call for Papers

The 2019 Annual Conference in Kansas City, MO features a call for papers for the Research Summit track. Please consider submitting papers or groups of papers as entire sessions from your TC for the conference. Abstracts are due August 21, 2018. If you have any questions, please contact Melanie Derby, the Research Summit Track Chair at derbym@ksu.edu

2. Student Authors Recognized at 2018 Annual Conference

Starting at the 2017 Winter Conference, CEC began recognizing student papers. Certificates were awarded to students at their assigned conference paper session. Certificates in the categories “*Best Paper*” and “*Honorable Mention*” were presented to graduate candidates and PhD candidates.

Four students will be recognized with CEC student paper awards at the 2018 Annual Conference.

3. Program statistics for Houston; for a total of 108 available slots:

Conferences Papers

- 127 conference paper abstracts submitted, 105 approved
- 67 conference papers presented
- 20 Conference Paper Sessions

Technical Papers

- 21 Technical papers received
- 14 Technical papers presented
- 4 Technical Paper Sessions

Seminars

- 100 submitted
- 72 presented

Workshops

- 9 submitted
- 7 presented

Forums

- 11 submitted
- 4 presented

Debates

- 2 submitted
- 1 presented

Panels

- 4 submitted
- 1 scheduled (withdrawn)

4. 2019 ASHRAE Winter Conference in Atlanta, January 12-16:

<http://www.ashrae.org/atlanta>

- a. Conference Papers are due July 9
- b. Seminar, Forum, Debate, Panel and Workshop proposals are due August 3
- c. Program notifications go out September 14
- d. Web site opens for presentation uploads on November 30
- e. All presentations due online January 4, 2019

2019 Winter Conference Chair is Corey Metzger, corey.metzger@resourcece.com

Tracks and Track Chairs

Track 1: Systems and Equipment

Joe Firrantello, j.firrantello@gmail.com

Track 2: HVAC& R Fundamentals and Applications

Rick Hermans, herma015@umn.edu

Track 3: Refrigeration

Sonya Pouncy, sonya.pouncy@gmail.com

Track 4: Construction, Operation and Maintenance of High Performance Systems

Leticia De Oliveira Neves, leneves@gmail.com

Track 5: Common System Issues and Misapplications

Lee Riback, lee.riback@gmail.com

Track 6: The Convergence of Comfort, Indoor Air Quality and Energy Efficiency

Ashish Rakheja, ashish.rakheja@aeonconsultants.in

Track 7: Building Integrated Renewables and Natural Systems

Maggie Moninski, maggie.moninski@gmail.com

Track 8: The Engineer's Role in Architecture

Ashu Gupta, ashu.energy@gmail.com

5. **2019 ASHRAE Annual Conference in Kansas City, MO:** www.ashrae.org/kansascity
 - a. Conference Paper Abstracts, Technical Papers and Paper Session requests due August 21, 2018
 - b. Conference Papers due November 30, 2018

2019 Annual Conference Chair is Carrie Anne Monplaisir, carrie.monplaisir@gmail.com

Tracks and Track Chairs

Track 1: Systems & Equipment in the Built Environment

Kimberly Pierson, kdpwildcat@gmail.com

Track 2: Fundamentals and Applications

Gary Debes, gary.debes@comcast.net

Track 3: Optimization in HVAC&R

Vikrant Aute, vikrant@umd.edu

Track 4: Commissioning New & Existing Buildings

Raul Simonetti, raul.simonetti@carel.com

Track 5: Occupant Health & Safety

Chris Reinders-Caron, creinders@cannondesign.com

Track 6: Modeling Throughout the Building Life Cycle

Nivedita Jadhav, nivi2307@gmail.com

Track 7: Professional Development

Rich Rose, richr@mticontrols.com

Track 8: Research Summit

Bing Liu, bliu@neea.org

Track 9 (Mini-Track): Radiant Heating & Cooling Mini-Track

Devin Abellon, devin.abellon@yahoo.com

6. Potential Sources Bias Disclosure

In accordance with the ASHRAE Code of Ethics, speakers have been asked to fill out a potential sources bias disclosure document that will note affiliations/ involvement with any organizations with financial or commercial interest in the subject matter to be discussed.

7. TC Opportunities:

- a. TC members who want to submit a program should consult the Track Chair for assistance in preparing a good abstract, learning objectives, and Q&A to help assure complete submission.
- b. TCs and Sections are welcome to suggest new presentation formats (like how the Workshop was born). Best way to present material to benefit attendee is a goal.
- c. TCs and Sections are encouraged to work with a track chair to put together a series of sessions that can be used as a mini-track.
- d. Putting together an entire track of programs in cooperation with other TCs is also encouraged; keeping in mind that track subjects are typically determined 14-15 months prior to a conference.

8. CEC Announces a Call for Reviewers and Paper Session Chairs

ASHRAE has a number of conferences coming up that include papers, and CEC seeks your help in reviewing them. Additionally opportunities to chair a paper session are available. Specifically, there is an immediate need for reviewers and session chairs for the 2019 Winter Conference and various topical conferences.

Please submit your interest in reviewing a paper or chairing a paper session using the online form: http://web.ashrae.org/cec_request/. Please contact Tiffany Cox, ASHRAE Assistant Manager, Conference Programs, at tcox@ashrae.org for more information.

9. Topical Conferences

ASHRAE's topical conferences are focused on a particular aspect of the industry and bring together professionals for networking and professional development. Two topical conferences are available for the remainder of 2018.

2018 Building Performance Analysis Conference and SimBuild, co-organized by ASHRAE and IBPSA-USA

<http://www.ashrae.org/BuildPerform2018>

September 26-28, 2018, Chicago, Illinois

The conference program includes peer-reviewed papers, non-paper presentations and new program format types as well as the fourth annual ASHRAE LowDown Showdown modeling competition with a record 14 teams competing.

The Third International Conference on Efficient Building Design

<http://www.ashrae.org/Beirut2018>

October 4–5, 2018, Beirut, Lebanon

The conference is to present advanced research on the topics of advanced building and bioclimatic designs for attaining occupant comfort and good environmental quality addressing systems and technologies adapted to the Arab region in both moderate and hot humid climates.

10. Program Types

Technical Paper Session:

These sessions present papers on current applications or procedures, as well as papers resulting from research on fundamental concepts and basic theory. Papers presented in these session have successfully completed a rigorous peer review. Forms for written comment are available at each session, and sent to respective authors for reply and publication in ASHRAE transactions, if received by a certain date.

Conference Paper Session:

These sessions present papers on current applications or procedures, as well as papers reporting on research in process. These papers differ from technical papers in that they are shorter in length and undergo a much less stringent peer review.

Seminar:

These sessions feature presentations on subjects of current interest. There are not papers attached to seminars.

Workshop:

These sessions enable technical committees and other ASHRAE committees to provide a series of short presentations on a topic requiring specific expertise. These short presentations are provided with an increased emphasis on audience participation and training in a specific set of skills. There are not papers attached to workshops.

Forum:

The sessions are “off-the-record” discussions held to promote a free exchange of ideas. Reporting of forums is limited to allow individuals to speak confidentially without concern of criticism. There are not papers attached to forums.

Panel Discussion:

Panel discussions can feature a broad range of subjects and explore different perspectives on industry related topics. This session format includes a panel of 3-4 speakers each addressing a facet of the session topic, followed by an interactive discussion lead by the session chair. Panel Discussions may be 60 minutes or 90 minutes in length and will be posted online in the Virtual Conference.

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